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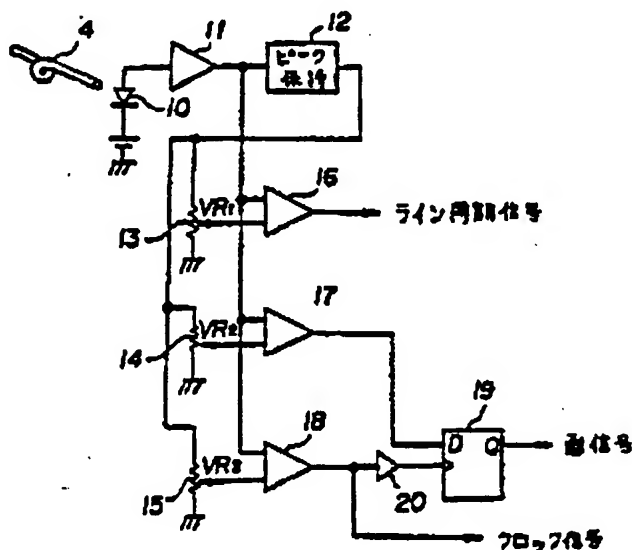
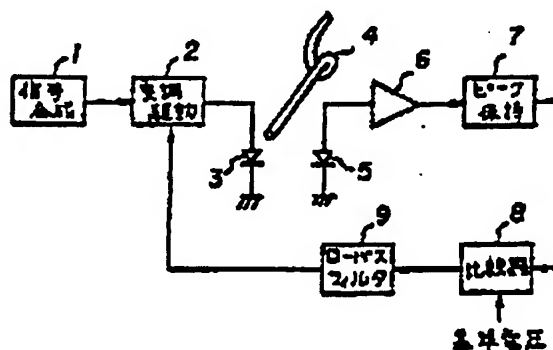
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(57) Abstract:

**PURPOSE:** To attain multiplex transmission for a binary signal with an inexpensive equipment by applying multiplexing in a way that a binary signal is a maximum value of a multi-value signal, using a signal maximizing the multi-value signal as a reference signal to control the output of light source and binarizing the voltage division of the peak value of the multi-value signal at the reception side as a threshold voltage.

**CONSTITUTION:** A signal synthesis circuit 1 applies multiplex through multileveling a line synchronizing signal in the order of a picture signal and a clock signal. A modulation drive circuit 2 uses the multi-



value signal to apply modulation drive to a light source 3 to output an optical signal. Part of the optical output is subjected to photoelectric conversion by a photodetector 5. This signal is fed back to the circuit 2 via a peak hold circuit 7, a comparator 8 and an LPF 9 to the circuit 2 so as to make the maximum value of the output of the light source 3 equal to a reference signal voltage of the comparator 8. A receiver holds the maximum value of the input signal by the peak hold circuit 12, that is, holds the voltage of the line synchronizing signal. Voltage division circuits 13-15 form reference voltages VR1-VR3 from the output signal of the circuit 12, comparators 16-18 use the reference voltage to binarize the output of the amplifier 11 to obtain said 3 signals. A DFF 19 obtains the original picture signal from the clock signal by the comparator 18 through the use of the picture signal from the comparator 17.

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